

## **TESTING GYROCHRONOLOGY: KEPLER OBSERVATIONS OF COMMON PROPER MOTION PAIRS**

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The exquisite photometry and continuous viewing capability of the Kepler spacecraft make it possible for the first time to measure directly the rotation periods of stars older than a few hundred million years, by tracking the subtle brightness changes as starspots cross the stellar surface. Two, or possibly three, of the four star clusters in the Kepler field of view will enable an extension of the age/mass/rotation-period calibration to older ages. However, the cluster calibrations will add just two or perhaps three points to the age-period relation, and furthermore, the cooler cluster stars are too faint to be observable with Kepler. To fill in the calibrations and particularly to extend them to the cooler stars, we are planning to observe a selection of common proper motion stellar pairs that cover a wide range of spectral types from late F stars to M dwarf stars. We will assume that the stars in these pairs are coeval, even though initially we may not know their actual ages. The key questions we will address are how the rotations of stars (especially cooler stars) of the same age depend on temperature and how much dispersion there is in the age-rotation relation at a given age.